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THE SERVICE OF STATISTICS IN PROBLEMS OF WAR AND PEACE.*

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The great war now tearing at the vitals of the world brings vividly before us the fact that the one most important political problem is the problem of war. Is war a good or an evil? Does war if successful pay the victor? Can war in any case be escaped? What are the real causes of war? What are its real effects?

These great problems have long been the subject of much discussion. In particular during the years just preceding the present war, a great deal of literature on the subject was evoked by the enormous expenditures of nations in preparation for war and by the obvious threat of the outbreak of hostilities. Some writers, like Bernhardt, glorified war as the duty of the superior race and as a benefit not merely to such race but to the world in general. Others, like Norman Angell, urged that war is an economic, social, and moral absurdity from which no nation and no class can gain. Most writers on the subject of war and peace, however, argued primarily on *a priori* grounds or made statements of fact without adequate proof. There is profound need of more detailed and more scientific inquiry. The economists, political scientists, and statisticians of the world ought to undertake a study of problems of war and peace on a larger scale and with greater thoroughness than they have hitherto done.

The present war will furnish a new mass of data for such an investigation. From no minor war could any such evidence be derived as to the effects of warfare upon the nations con-

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cerned and upon the rest of the world. Moreover, it is precisely this kind of gigantic conflict which must be anticipated from time to time in the future unless the world becomes convinced that warfare is unprofitable and succeeds in devising means of checking its recurrence. There is little chance that any two first rate powers in the future can resort to arms without bringing in other powers and initiating a world conflict.

A large proportion of the facts which should be known with reference to war and which bear on war problems are statistical facts. Many of the social and economic phenomena involved can be set forth only by statistics. The collection and analysis of data bearing upon the subject constitute an enormous field for the scientific statistician. If, as nearly all people hope, the United States can keep from being drawn into the present conflict, the American statistician will be peculiarly qualified to conduct statistical investigations regarding that conflict and its results. Free from the prejudice which can hardly fail to influence even the scientists of the warring nations, he should be able to present facts in their true light.

To mention some of the specific topics within this general field which lend themselves to statistical investigation is the object of this paper.

Most obvious, of course, is the topic of the economic cost and losses of war. So far as the direct costs are concerned, no great difficulty confronts the statistical investigator. He should readily be able to ascertain the direct expenditures of governments in preparation for war, in the actual conduct of war, in paying interest on war debts and in pensions. It would seem desirable to analyze data of expenditures in very considerable detail and to present also full information as to the sources of the funds expended. There would be much interest, also, in statistics as to the quantities of the various kinds of commodities and services used for military purposes and as to the sources whence the commodities were obtained—whether from previously accumulated stocks, from home production during the war, or by importation or capture.

The indirect costs of war furnish a more difficult field of inquiry. For instance, there is the question of the cost, under the system of compulsory military training, of taking

the young men of the nation for a period of years from the farm or the factory to the camp and the barrack. It may be, as contended by some, that the value of the military training in the life of men even in times of peace more than counterbalances the loss of time. This claim seems capable of investigation in some measure by statistical methods. One might compare the efficiency of the men of nations which have compulsory military service with that of the men of other nations, taking due account of differences in other conditions.

In the second place, in reckoning the cost of actual warfare the statistician might seek to compute the money value of the loss through the destruction of human lives and the maiming and invaliding of men. This is an economic loss quite aside from the pain and sorrow entailed.

Again, the statistician might seek to calculate the losses due to the destruction of non-military property and the disturbance of production and trade through war. Of course, one must not duplicate costs by adding to the expenditures of governments for the conduct of war, the amount by which the production of commodities not used for military purposes is reduced during the conflict. What happens in time of war is that a large part of the labor and capital of the country is turned from one occupation to another. People forego the production and consumption of certain kinds of goods in order to expend an equivalent amount of energy for military ends. But this very process of turning energy from one channel to another involves enormous friction and loss both during the war period itself and for a long time thereafter, and some measure of this is doubtless possible.

Especially great is the shock to business from a world war in these modern days when so much business is international in character. Before the present war broke out a large proportion of the products of each of the warring nations was being sold in other countries, great quantities in fact in countries now become enemies. International investment of capital had become of vast importance. A complex fabric of international exchange and credit had been built up. The business interests of each country were closely interwoven with those of other lands. This intricate business relationship of nations

has been torn asunder. Dealings between hostile countries have naturally ceased. Much of the business of the belligerents with neutral countries has been broken off or radically altered in character. The economic effects of the war have extended far beyond the boundaries of the fighting nations. This tremendous upheaval will leave its traces long after the war is over. The business relationships which formerly existed will not be readily renewed; in many cases the relationships of the future will permanently differ from those of the past.

To determine as far as possible the actual effects of the present war upon international business, to measure the nature, location, and extent of the losses involved and of the gains, if any there be, is a task largely within the province of the statistician.

Still another exceedingly important subject for investigation is the effect of war upon the distribution of wealth and income. Are the costs and losses fairly distributed among the people? The distribution of the burdens of taxation for war purposes, of the burdens of military service and of the indirect costs and losses of war should be considered. The relative effects upon different economic and social classes, upon different industries and occupations, should be measured so far as possible. Among the more specific problems in this field is that of the effect upon the different classes of people of the creation of a huge national debt. This subject has already been discussed with much acumen from an abstract standpoint, but more statistical facts concerning it should be sought.

The present war will afford important material for the study of vital statistics. Its effects upon the growth of population, both in the warring and in neutral countries, upon the marriage rate and the birth rate, upon migration, are bound to be marked. Still more interesting are questions as to the influence of war upon the physical, mental, and moral characteristics of the people. It has been urged that a great war, by killing off a large proportion of the stronger men, must cause a physical deterioration in succeeding generations. It has been suggested, too, that in the same way a deterioration of mental ability and even of morals may result from the decima-

tion of the population. The statistician can do something, at least, to test the validity of these opinions. Measurements and mental tests of children born during and after the war may be compared with those of children born during times of peace. Statistics of insanity and other congenital defects should be carefully studied at this particular time. Such investigations in vital statistics may throw new light upon laws of heredity and of human reproduction. It will be recalled that some have even argued that an increase in the relative number of male compared with female children results from the destruction of a large fraction of the adult men in a great war. The present conflict will furnish a test of this very doubtful view.

Such statistical studies of the effects of war as have been suggested—and these are by no means all that might be undertaken—would have not merely scientific interest; they might materially affect the future. The direction of this influence would of course depend upon the facts ascertained. Should it appear that the costs and losses of war are greater than ordinarily supposed, that those costs and losses are very unequally distributed among the people, and that serious injury results to the vitality of the nation, a general dissemination of these facts would surely cause rulers and people to be less ready to unsheathe the sword.

In quite another way, moreover, might the statistician affect the future of war and peace. He could throw more light upon the economic causes and motives of war. We need to know more, in the first place, as to the gains which a nation entering into any policy that tends to arouse international hostility may hope to attain by such policy. In the second place, we need more information as to the effect of the progress of one nation, particularly in its foreign trade, upon the prosperity of other nations. Finally, we need more light as to the economic advantages which a nation entering into war may expect to gain if it is victorious.

These three questions are intimately related. The same statistical investigations would go far toward answering them all. To illustrate this point it may be noted that it is not necessary to await the outcome of actual conflict in

order to form some judgment as to the possible gains of victory. For the economic objects which nations aim to secure by war are usually either precisely the same as, or more or less similar to, the objects which at other times they seek by less forceful means and which not infrequently one or another nation so obtains. Thus new colonial possessions, new spheres of influence in backward lands are sometimes gotten in peaceful ways, sometimes only by the sword. If the statistician can measure the gain from those acquired in the one way, we can forecast the gain from those acquired in the other. And by much the same process we can learn whether and how much rival powers are injured by such acquisition of territory or of spheres of influence.

That statistics have an important bearing in showing the wisdom or the folly of those nationalistic policies which tend to bring about war is evident from a mere enumeration of some such policies. For example, nations often seek the partial or complete exclusion of foreign goods, or seek to give their own citizens an advantage in international trade over competitors abroad. Import and export duties, laws for the direct exclusion of foreign products, bounties direct or disguised for home production or for exportation, are some of the measures by which these objects are sought. Other nations retaliate and the mere struggle of legislation and diplomacy may develop into armed conflict, or at least become a contributing cause of it. Other policies which often become a source of international friction are those with respect to shipping and other transportation agencies, to migration and the rights of foreign residents, to the investment of capital by foreigners, and especially to colonies and spheres of influence.

Regarding the effects of all economic policies of this character, much may be learned from statistics. Data as to the production of wealth in general and of particular kinds of wealth, as to the investment of capital, as to exports and imports, as to international exchange, as to currency and banking, as to prices and wages—all of these have their bearing on the wisdom or unwisdom of such policies.

It has been contended by many that, even if such policies

as have been mentioned did not involve the risk of drawing nations into war, they would still be economically unwise from the standpoint of the nation adopting them. We are told that it cannot pay a nation to adopt any line of conduct designed to give its citizens an advantage over those of other countries. Freedom for persons, for trade and for capital, parity between the citizen and the foreigner, are held to promote the wellbeing of a given country more than any form of discrimination. Others without such sweeping condemnation of all nationalistic policies maintain that at least this, that or the other such policy must fail to achieve the advantage sought. Against these stand many firm believers in the gains from nationalistic policies skilfully pursued. Much of the discussion pro and con has consisted of mere assertions or has rested on abstract reasoning alone. The true statistician, the honest and expert analyst of mass data, has indeed devoted no little study to the problems of nationalistic policy, but he has far from exhausted the field. In some directions there is still lack of statistical material which might without undue difficulty be secured. In other cases existing statistics are too inaccurate to furnish the basis for sound conclusions. But above all, the available statistics have not been adequately analyzed with a view to their bearing upon nationalistic policy. The statistician should seek greater influence in the shaping of legislation and administrative action regarding such matters as tariff, shipping, immigration, rights of foreigners and of foreign capital, colonies and spheres of influence. Not only would he thus aid the nation in the promotion of its true interests, but in all probability the wiser action which would result would remove much of the friction between nations and lessen the likelihood of war.

The assumption often underlying nationalistic policies is that the gain of one country must mean the loss of another. The people of England, for example, very generally believe that they have been injured by the industrial progress of Germany and the rapid increase of German exports. The majority of Germans believe that England's control of vast and populous dependencies has hampered the development

of German foreign trade. International jealousies based on such beliefs are important causes of war.

This underlying assumption of nationalism has recently been brilliantly attacked by Norman Angell and others, but it can not be said to have been subjected to the rigid test of scientific analysis. As has already been suggested, those statistical investigations which would help in the wise shaping of nationalistic measures or which would check their undue extension, would incidentally serve to test this assumption. And, in the same way, such statistical investigations would affect the allurements of victory, would lessen that allurements should the facts disclosed tend to show that the possible gains are less than ordinarily supposed.

We have thus far considered only the economic problems connected with war. Can the statistician go further and throw new light on those problems which are distinctly not economic in character?

We have heard much in recent years about the relation of nationality to war. Inherent national traits and peculiarities are held largely to explain all great conflicts. We are told by some that one of the chief causes of war is failure to give due recognition to the principle of nationality in fixing the boundaries of states. On the other hand, some give to nationality an even more threatening position as the disturber of peace. To establish each nationality as a self-governing state would in their opinion by no means cause wars to cease, but might even increase their frequency. They hold that often the inborn differences and antipathies between the peoples of different states are so great that they are sure from time to time to break forth into armed conflict.

Here again we are dealing too much with theory and bald assertion. We know too little about the facts of nationality. It is largely in statistics that we must seek more knowledge. The statistician may describe and weigh more accurately than has yet been done the characteristics of the several nationalities at the present time and the differences among them. Especially can he help us to judge to what extent the physical, mental and moral peculiarities of peoples are inborn and to what extent they are due merely to environment and

to historical accident. Men often speak glibly of the traits of the Teuton, the Celt, the Slav, or the Roman as being universal to all members of the group and as being unchanging. It may be so, but the assertion lacks proof. Compare, if you can, not the Teuton living in the north with the Roman living in the south, but the Teuton and the Roman living under similar conditions of soil and climate. Compare, if you can, not the Slav living amid the traditions of Russia with the Anglo-Saxon living amid the traditions of England, but the Slav and the Anglo-Saxon living in the same country under the same traditions. The United States offers a peculiarly favorable place for making such comparisons. We have assembled here representatives of every nationality. By the study of the nationalities in America the statistician and the sociologist can contribute much to science. Professor Boaz of Columbia University, as the result of interesting statistical measurements, has reached the conclusion that important physical changes take place with comparative rapidity among immigrant peoples after their arrival in the United States. If that is true it seems likely that mental and moral changes, changes in habits and ideals often supposed to be inborn, must likewise take place. Further statistical investigations along this line are clearly desirable.

If statistical study should perchance indicate that the extent and the permanence of the differences among nationalities have been exaggerated, this conclusion, when made widely known among the masses of mankind, would surely tend somewhat to lessen international antipathies. It has been the hope of pacifists that as, with increasing education and increasing intercourse, the people of one nation came to know more about their neighbors they would find more to like in them and less to dislike and fear. Even if, on the other hand, the statistician should ascertain that great and enduring differences do exist among nationalities, yet might his work serve somewhat to lessen the chances of war by leading nations to adopt policies, both internal and external, based on recognition of those differences.

Finally, the venturesome statistician may try his mettle on the problem of the moral consequences of preparation for

war and of war itself. Statistical data in this field must always be inadequate, but they may perhaps enable us to form some approximate judgment of the relative merit of the claim of the extreme militarists who maintain that war has an ennobling influence, and that of the extreme pacifists who hold that war is an injury to all the highest interests of mankind. The present struggle will furnish more material for such investigations than has hitherto been available to the scientific student.

It may be that some of the suggestions here presented as to the service of statisticians in solving problems connected with war are Utopian. Even as to much simpler matters it is hard to get sufficient and sufficiently accurate statistics and hard to draw certain conclusions even from satisfactory data. There are many factors in these problems which are not capable of statistical presentation. But public policy is being year by year more affected by the work of the statistician. He has already no little influence in matters relating to war and it is not too much to expect that deliberate efforts to increase that influence will prove well worth while.